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## PATENT ABSTRACTS OF JAPAN

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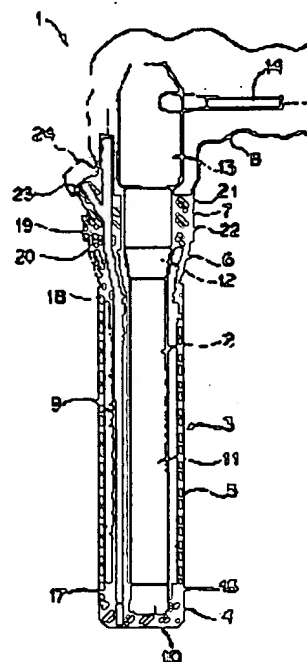
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## (54) COVER TYPE ENDOSCOPE

## (57)Abstract:

PURPOSE: To achieve easier work in the removal of a cover from an endoscope body while preventing re-using of the cover after pulling off.

CONSTITUTION: In a cover type endoscope 1 used by mounting an endoscope cover 3 on an endoscope 2 for covering, the endoscope cover 3 covering the endoscope 2 for covering has a tip cover 4, a sheath 5, an anti-bending cover 6, a hand port body part 7 and an operating part cover 8, and the plurality of these members are joined together by a connection means such as bonding at joint parts 16-21. The joint strength of the joint parts 16-21 is set above 2kg but below 6kg so that a joined state can be kept during the use of the endoscope cover 3 while a worker can divide them when the endoscope cover 3 is pulled off the endoscope 2 for covering.



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the covering formula endoscope which equips with and uses covering for the main part of an endoscope.

[0002]

[Description of the Prior Art] In recent years, in the medical-application field etc., the covering formula endoscope which equips with and uses covering (it is hereafter called endoscope covering) exchangeable for the main part of an endoscope (it is hereafter called the endoscope for covering) is proposed.

[0003] Generally in a covering formula endoscope, the thing of composition of having joined a flexible envelope sheath and a flexible channel between hard nose-of-cam covering and the hand mouth soma as wrap endoscope covering is used in the endoscope for covering. In a covering wearing state, it is fixed to the nose-of-cam composition section of the endoscope for covering with a certain means at a part of control unit of the endoscope for covering, respectively, and, as for such endoscope covering, nose-of-cam covering covers [ a hand mouth soma ] the insertion section of the endoscope for covering etc. in it.

[0004]

[Problem(s) to be Solved by the Invention] In the covering formula endoscope of the conventional composition, in order to have to carry out evulsion from the endoscope insertion section of \*\* length, canceling the fixed state of nose-of-cam covering, an endoscope point, and a hand mouth soma and an endoscope control unit as an envelope sheath is shifted when it is going to carry out evulsion of the endoscope covering from the endoscope for covering after inspection from the state equipped with endoscope covering, the attachment-and-detachment work of covering was complicated, and this trouble had time and effort. Since there is no crevice between the endoscope insertion section and an envelope sheath not much at this time, friction between both is also large, and the more the insertion division manager excels, the more carrying out evulsion takes time and effort. Moreover, there is a possibility of carrying out the reuse of the covering with which it was polluted after use and which should be thrown away accidentally.

[0005] this invention was made in view of these situations, and aims at offering the covering formula endoscope which can do easily the work at the time of removing covering from the main part of an endoscope.

[0006]

[Means for Solving the Problem] In what the covering formula endoscope by this invention has wrap endoscope covering for the insertion section of the aforementioned endoscope for covering at least with the endoscope for covering, and equips with and uses the aforementioned endoscope covering for the aforementioned endoscope for covering The aforementioned endoscope covering can be joined, two or more members can be constituted, and the junction state of the joint of two or more aforementioned members can be held at the time of use of this endoscope covering. And when carrying out evulsion of the aforementioned endoscope covering from the aforementioned endoscope for covering, the bonding strength of the aforementioned joint is set up so that division of the aforementioned joint may be attained.

[0007]

[Function] When the junction state of the joint of two or more aforementioned members can be held for the bonding strength of the joint in endoscope covering constituted by joining two or more members at the time of use of endoscope covering and evulsion of the endoscope covering is carried out from the endoscope for covering, the work at the time of the evulsion of endoscope covering serves as an execute permission easily by setting up so that division of the aforementioned joint may be attained.

[0008]

[Example] Hereafter, the example of this invention is explained with reference to a drawing. Drawing 1 is composition explanatory drawing showing the whole covering formula endoscope composition concerning the 1st example of this invention.

[0009] The covering formula endoscope 1 of this example consists of combination of the endoscope 2 for covering which is the main part of an endoscope with which it is equipped with covering, and the endoscope covering 3 with which this endoscope 2 for covering is equipped removable.

[0010] The universal cords 14 and \*\*s which extended at the nose-of-cam composition section 10 in which observation optical system etc. was formed, and the \*\* length inserted in an observation part from the insertion section 11 of elasticity, the OREDOME section 12 of the taper configuration prepared in the end face section of the insertion section 11, the control unit 13 that served as the grasping section of \*\*\*\*, and the control unit 13, and built in the light guide, the signal line, etc. are formed successively, and the endoscope 2 for covering is constituted.

[0011] The nose-of-cam covering 4 formed on the other hand by the hard or half-hard resin by which the endoscope covering 3 engages with the nose-of-cam composition section 10 of the endoscope 2 for covering, The sheath 5 formed by the flexible resin used as a wrap covering envelope etc. in the insertion section 11, The control unit covering 8 and \*\* which were formed by the flexible resin which covers the OREDO mechanism bar 6 formed by the flexible resin which covers the OREDOME section 12, the hand mouth soma 7 formed by the hard or half-hard resin which engages with a part of control unit 13, and a control unit 13 are formed successively and constituted.

[0012] In a sheath 5, the duct 9 which lets a disposal implement, a fluid, etc. pass is arranged, and connection fixation of the edge of a duct 9 is carried out at the nose-of-cam covering 4 and the hand mouth soma 7, respectively. Each component of the endoscope covering 3 is mutually joined by connecting means, such as adhesion, welding, pressing fit, or bolting of heat-shrinkable tubing 22, in joints 16-21. Moreover, a duct 9 and the disposal implement insertion mouth 23 open for free passage are formed in the hand mouth soma 7, and the disposal implement plug 24 is attached in this disposal implement insertion mouth 23 free [ attachment and detachment ].

[0013] Where the endoscope 2 for covering is equipped with the endoscope covering 3 like drawing 1, it is fixed by frictional force or mechanical engagement, respectively, and a part of nose-of-cam covering 4, the nose-of-cam composition section 10 and the hand mouth soma 7, and control unit 13 are usable as an united covering formula endoscope 1.

[0014] In the covering formula endoscope 1 of such composition, the insertion section 11 of the endoscope 2 for covering is inserted into the sheath 5 of the endoscope covering 3, holding the hand mouth soma 7, in case the endoscope 2 for covering is equipped with the endoscope covering 3. Since frictional force arises between the insertion section 11 and a sheath 5 (or duct 9 in a sheath 5) at this time, this frictional force must be resisted and the insertion section 11 must be inserted. Since this frictional force is about 2kg in the large time, in order not to destroy the endoscope covering 3 at the time of covering wearing, it is necessary to make the bonding strength of joints 18, 19, and 20 larger than 2kg.

[0015] Moreover, if the case where a user holds only the control unit covering 8 and has the covering formula endoscope 1 in the state of covering wearing is assumed, the weight of the covering formula endoscope 1 is heavy, and since it is about 1.5kg, it needs to make the bonding strength of a joint 21 larger than 1.5kg.

[0016] Furthermore, although a duct 9 and a sheath 5 are pulled to the nose-of-cam covering 4 by the insertion section's 11 forming a loop or incurvating the insertion section 11 at the time of inspection, since it is about 2kg at the maximum, this amount of tensile force needs to make the bonding strength of joints 16 and 17 larger than 2kg.

[0017] In this example, it can prevent that the endoscope covering 3 breaks at the time of covering

wearing and inspection by joining each component by the above-mentioned bonding strength.  
 [0018] It is difficult to \*\*\*\* on the other hand, moving all the components of the endoscope covering 3 from a covering wearing state like drawing 1 simultaneously, when it is going to \*\*\*\* endoscope covering 3 from the endoscope 2 for covering after an inspection end. If each component is divided and it is made to \*\*\*\* one by one at this time, the removal work of covering will become easy. However, since it becomes impossible to divide when the bonding strength of each joints 16-21 mentioned above is too stronger than required, let the upper limit of a bonding strength be the intensity of the grade which a user can pull and divide.

[0019] Usually, when people have the thing of the size which is covering formula endoscope 1 (especially insertion section 11) grade in both hands and pull it, it is thought that the amount of tensile force which can be generated even if it does not carry out especially unreasonableness is about 6kg. Then, the bonding strength of joints 16-21 is larger than 2.0kg (a joint 21 is 1.5kg), and it is desirable to be referred to as 6kg or less.

[0020] As a concrete procedure at the time of \*\*\*\*(ing) endoscope covering 3, two examples are shown below.

[0021] From the state of drawing 1, first, the 1st example of the procedure of \*\*\*\*(ing) endoscope covering cancels the fixed state of the nose-of-cam covering 4 and the nose-of-cam composition section 10, and pulls the nose-of-cam covering 4 to the hand mouth soma 7. Then, the nose-of-cam covering 4 is divided and removed from a sheath 5 or a duct 9. Subsequently, if a duct 9 is pulled to the hand mouth soma 7, a duct 9 will separate from the hand mouth soma 7. Next, the control unit covering 8 is pulled and divided to the hand mouth soma 7.

[0022] And the hand mouth soma 7 currently fixed to the control unit 13 is removed from a control unit 13, and it extracts in the direction of a nose of cam. Although a sheath 5 is also \*\*\*\*(ed) together with the hand mouth soma 7 at this time, since the duct 9 in a sheath 5 is already removed, the crevice between a sheath 5 and the insertion section 11 is large, and it hardly produces friction among both. Therefore, if the hand mouth soma 7 is extracted in the direction of a nose of cam, a sheath 5 will also move especially a load does not have this thing and together. Finally, control unit covering 8 is \*\*\*\*(ed).

[0023] First, the 2nd example of the procedure of \*\*\*\*(ing) endoscope covering pulls the nose-of-cam covering 4 to the hand mouth soma 7, and separates a joint 18 (or 19) and a joint 17 from the state of drawing 1. Then, the nose-of-cam covering 4 and a sheath 5 are \*\*\*\*(ed). Next, the control unit covering 8 is removed from the hand mouth soma 7, control unit covering 8 is \*\*\*\*(ed) from a universal-cord 14 side, and, finally the hand mouth soma 7 and a duct 9 are \*\*\*\*(ed) in the direction of a nose of cam. It is [ work ] easier for the control unit covering 8 to \*\*\*\* a universal cord 14 from a universal-cord side like [ when the wrap length is longer ] this example rather than wrap length for a control unit 13.

[0024] In addition, the procedure of \*\*\*\*(ing) endoscope covering can consider various procedures not only to the two aforementioned examples but to others. You may adopt another \*\*\*\* procedure by liking of a user.

[0025] Since it enables it to divide the endoscope covering 3 at the time of covering \*\*\*\*, it stops thus, being able to carry out the reuse of the covering used at once in this example.

[0026] While being able to prevent that the endoscope covering 3 is damaged according to the composition of this example in case the endoscope 2 for covering is equipped with the endoscope covering 3, as explained above, in case the endoscope covering 3 is removed from the endoscope 2 for covering, the endoscope covering 3 can be divided and it can \*\*\*\* easily, and the workability at the time of covering attachment and detachment can be improved. Moreover, since endoscope covering 3 is divided in case it is \*\*\*\*(ed) after use, it can prevent carrying out the reuse of the covering with which it was polluted after \*\*\*\* accidentally.

[0027] The perspective diagram in which drawing 2 or drawing 4 starts the 2nd example of this invention, and drawing 2 shows the composition of the point of a covering formula endoscope, the cross section in which drawing 3 shows the connection structure of the duct inside nose-of-cam covering, and drawing 4 are the side elevations showing the composition of the disposal implement insertion mouth prepared in a hand mouth soma, and a disposal implement plug.

[0028] As a modification of the composition of endoscope covering, the 2nd example explains the

example of composition at the time of arranging two ducts in a sheath so that two disposal implements can be inserted in.

[0029] As shown in drawing 2, the endoscope covering 25 of this example has the nose-of-cam covering 26 like the 1st example, and the lens covering 27 which consists of a transparent member, a nozzle 28, and the opening 29 for disposal implement projection are formed in the apical surface of this nose-of-cam covering 26. One side of a nozzle 28 is prepared in supplied air, and another side is established in water supply. Opening 29 is formed in the ellipse (or ellipse form), and has the cross section which disposal implement 2 duties can insert in easily.

[0030] The path of a point can be made small as much as possible by arranging the opening 29 with a big size in the center section like drawing 2 as arrangement composition of each component in the nose-of-cam covering 26, and arranging a nozzle 28 on the both sides.

[0031] The internal structure of the about 29-opening nose-of-cam covering 26 is shown in drawing 3. In the apical surface of the nose-of-cam covering 26, although one opening 29 is formed, inside, two ducts 30 and 31 for disposal implement insertion are bundled, and it is joined to the nose-of-cam covering 26, and these two ducts 30 and 31 are open for free passage to opening 29, and are packed into one. Two ducts 30 and 31 may be sizes which may use the thing of the same size and are different.

[0032] As shown in drawing 2, the width of face of the direction of a major axis of opening 29 is equivalent to a part for two of the bore of ducts 30 and 31, or is set as the width of face beyond it. In drawing 2, the dashed line shows the bore of ducts 30 and 31. In addition, although width of face of the direction of a major axis of opening 29 may be made narrower than a part for two of the bore of ducts 30 and 31, it is set as the size which two disposal implements can insert in easily anyway.

[0033] Thus, although not illustrated to the mouth soma by the side of a hand in composition of having formed two ducts 30 and 31 in the endoscope covering 25, corresponding to ducts 30 and 31, a disposal implement insertion mouth and every two disposal implement plugs are formed.

[0034] In addition, one duct which has as a modification two lumens of the size which can insert in two disposal implements with an ellipse (or ellipse form) instead of ducts 30 and 31 can be formed. although in this composition one disposal implement insertion mouth 33 and the disposal implement plug 34 are formed in the hand mouth soma 32 as shown in drawing 4 -- as the disposal implement plug 34 -- two insertion -- what is necessary is just to use what has holes 35 and 36

[0035] moreover, the composition which formed the two aforementioned ducts 30 and 31 -- also setting -- two insertion like drawing 4 -- the disposal implement plug 34 which has holes 35 and 36 can be used

[0036] It has two disposal implement channels in endoscope covering, two ducts are independently joined to nose-of-cam covering like before in the covering formula endoscope which made two disposal implements usable simultaneously, and only the thick part between two openings has the trouble which a covering point large-diameter-izes with the composition which prepared two openings which became independent respectively. Then, by bundling two ducts 30 and 31 and joining to the nose-of-cam covering 26 like this example, opening 29 is made to one and-izing of the nose-of-cam covering 26 can be carried out [ narrow diameter ].

[0037] moreover, drawing 4 -- like -- the disposal implement insertion mouth of a hand mouth soma -- setting -- two insertion -- by using the disposal implement plug 34 which has holes 35 and 36, cost can be reduced and handling can also be made easy

[0038] Thus, according to the composition of the 2nd example, it has the effect two disposal implements can carry out [ narrow diameter ]-izing of the point of an usable covering formula endoscope simultaneously.

[0039] Drawing 5 is composition explanatory drawing showing the composition of endoscope covering concerning the 3rd example of this invention, and a covering container.

[0040] The 3rd example explains the packing state before using endoscope covering. Before use, the endoscope covering 3 is contained by the covering container 38, and it is kept and it is carried. A handle 39 is formed in the upper surface of the covering container 38, and the top and bottom of the covering container 38 are shown clearly. The structure fabricated by the covering container 38 and one is sufficient as this handle 39, and the thing of another object may be joined. In addition, if a handle 39 is fabricated to one, it can constitute more cheaply.

[0041] It is contained in the state where it was turned in the direction (that is, upper part) in which, as for the endoscope covering 3, a handle 39 has the nose-of-cam covering 4 in the covering container 38. This nose-of-cam covering 4 is equipped with the cap 40 who consists of the flexible quality of the materials, such as sponge, styrene foam, and an elastomer. In addition, this cap 40 is made into the structure with which the disposal implement insertion mouth of the hand mouth soma 7 can be equipped, it is also possible to make it serve with the disposal implement plug 24, and since it is not necessary to prepare the disposal implement plug 24 apart from a cap 40 in this case, cost can be reduced.

[0042] In a covering formula endoscope, in order to make the insertion section 11 of the endoscope 2 for covering easy to insert into the sheath 5 of the endoscope covering 3, powdered lubricant may be applied inside a sheath 5. Moreover, dust may be in a sheath 5 despite some. While carrying the endoscope covering 3 or keeping it, when lubricant, dust, etc. are in sheath 5 inside, it adheres to the optical surface (lens covering) which the lubricant in a sheath 5 etc. becomes from the transparent member of the nose-of-cam covering 4, and there is a possibility of causing trouble to the observation at the time of inspection. For this reason, it is necessary to turn the nose-of-cam covering 4 in the direction of antigravity until it uses it by inspection so that lubricant etc. may not adhere to the optical surface of the nose-of-cam covering 4.

[0043] Then, in this example, a handle 39 is formed in the covering container 38, and while the top and bottom of the covering container 38 are clearly shown by using a field with a handle 33 as the upper surface, nose-of-cam covering 4 is made into structure which is packed up with the state where it turned to the upper surface with a handle 39 into the covering container 38. Thereby, in the case of transportation or storage, the nose-of-cam covering 4 can prevent generating of the fault at the time of inspection, without lubricant and the dust in a sheath 5 adhering to the optical surface of the nose-of-cam covering 4 also in the state where the upper surface was turned to.

[0044] Moreover, if it packs up where the flexible cap 40 is put on the nose-of-cam covering 4, it can prevent damaging the nose-of-cam covering 4, or an optical surface getting damaged to the vibration under transportation, or a shock.

[0045] Thus, adhesion of the lubricant to the optical surface of nose-of-cam covering etc., damage on an optical surface, etc. at the time of conveyance and storage can be prevented, generating of the obstacle at the time of observation can be lost, and it can make it possible to perform good observation according to the composition of the 3rd example.

[0046] Drawing 6 is composition explanatory drawing showing the composition of endoscope covering concerning the 4th example of this invention, and a covering container.

[0047] The 4th example shows other examples of composition of a covering container as a modification of the 3rd example. The covering container 41 of the 4th example is constituted by the rectangular parallelepiped configuration of \*\* length, and the endoscope covering 3 is contained in the shape of an abbreviation straight line. The top-and-bottom display 43 which shows the direction of antigravity (above) is formed in the side 42 with the covering container 41. The sheet with which the top-and-bottom display 43 could be directly printed by the covering container 41, and such a display was printed could be stuck. Moreover, you may form the top-and-bottom display 43 not only in an unilateral side but in two or more sides or all the sides.

[0048] Moreover, this field's being the upper surface and the upper surface display 45 which turns this field up and shows transportation and the directions of a purport to keep are formed also in the upper surface 44 of the covering container 41. And the undersurface 46 of the covering container 41 can be opened and closed freely.

[0049] Into the covering container 41, as for the endoscope covering 3, the packing receipt of the nose-of-cam covering 4 is carried out so that it may be suitable at the upper surface 44. The control unit covering 8 is folded up and the other end side of the endoscope covering 3 is contained around the hand mouth soma 7. Positioning fixation of the nose-of-cam covering 4 and the hand mouth soma 7 is carried out within the covering container 41, and the endoscope covering 3 can be taken out no longer from the covering container 41 only by opening the undersurface 46.

[0050] In accordance with longitudinal shaft orientations, the cutline 47 is formed in the unilateral side of the covering container 41, and the covering container 41 can be divided now from a cutline 47 by applying the force so that this cutline 47 may be torn. Division of the covering container 41



cancels fixation of the nose-of-cam covering 4 by the covering container 41, and the hand mouth soma 7. The cutline 47 is formed by constituting or joining the covering container 41 which consists of two members in the portion of a cutline 47 so that only this portion may serve as thin meat. [0051] Since the side 42 and the upper surface 44 of the covering container 41 have the top-and-bottom display 43 and the upper surface display 45 which shows above in the covering formula endoscope using the covering container 41 of such composition and it is treated after it has recognized the direction of top and bottom and the nose-of-cam covering 4 has turned to above during transportation / storage in case a user deals with it, lubricant, the dust, etc. in a sheath 5 do not adhere to the optical surface of nose-of-cam covering 4, and good observation can do. If the top-and-bottom display 43 is formed in two or more pages or is prepared in all the sides, the direction of top and bottom can be recognized even from so various directions. Since a handle 39 like the 3rd example of drawing 5 is not formed with this composition, when treating two or more covering containers 41, it is not bulky, and workability is good.

[0052] In case the endoscope 2 for covering is equipped with the endoscope covering 3, the undersurface 46 of the covering container 41 is opened and the nose-of-cam composition section 10 and the insertion section 11 of the endoscope 2 for covering are inserted into the sheath 5 from the back end of the hand mouth soma 7. Since the endoscope 3 for covering is held in the shape of an abbreviation straight line at the covering container 41 at this time, insertion work is easy. In addition, it should just work towards the direction where a user also tends to do a lower part or a slanting lower part even if it has not turned the covering container 41 upward like drawing 6 at the time of covering insertion work. After carrying out the completion of wearing of the endoscope covering 3 at the endoscope 2 for covering, the covering container 41 is divided from a cutline 47, and the covering container 41 is removed from the endoscope covering 3.

[0053] Since it will be divided, it becomes impossible as mentioned above, to use the covering container 41 again, after equipping with covering once, although the covering container 41 has the function as a wearing auxiliary implement of the endoscope covering 3. Therefore, since it is impossible to use the covering container 41 which is a wearing auxiliary implement even if it is going to use it again accidentally after \*\*\*\*(ing) endoscope covering 3 used once from the endoscope 2 for covering, the new covering container 41 and the necessity using the combination of the endoscope covering 3 will arise, and the reuse of covering can be prevented.

[0054] Thus, according to the composition of the 4th example, adhesion of the lubricant to the optical surface of nose-of-cam covering at the time of conveyance and storage etc. is prevented, and since a covering container is not bulky at the time of handling in addition to the effect of the 3rd example that it can make it possible to perform good observation, workability can be improved. Moreover, since a covering container can be used also [ implement / covering wearing auxiliary ], while being able to aim at improvement in the workability at the time of covering wearing, and reduction of cost, the reuse of covering can also be prevented further.

[0055] Drawing 7 is composition explanatory drawing showing the composition of endoscope covering concerning the 5th example of this invention, and a covering abandonment bag.

[0056] The 5th example explains the handling at the time of discarding endoscope covering after use. The covering abandonment bag 48 for discarding the endoscope covering 3 after use is formed for the material of the flexible quality of the materials, such as polymeric materials, and opening 49 is formed in the upper-limit section. the diameter D of opening of this opening 49 -- the overall diameter d of hard [ of the endoscope covering 3 ], or the half-hard section, and abbreviation -- it is set as the same size In the endoscope covering 3, although the disposal implement plug 24 also has an elastic thing, since it cannot be made to deform greatly, in the state where it was attached in the hand mouth soma 7, it is regarded as the half-hard section in this case. Therefore, the overall diameter d of the endoscope covering 3 turns into a path of a portion including the disposal implement plug 24 of the hand mouth soma 7.

[0057] The opening 49 of the covering abandonment bag 48 is elastic by applying external force. In addition, like drawing 7 in the overall configuration of the covering abandonment bag 48, the lower part may serve as a bag which spread greatly, and may serve as a configuration of the \*\* length who extended with the size of the diameter D of opening of opening 49 from opening 49.

[0058] The endoscope covering 3 is removed from the endoscope 2 for covering after endoscopy,

and from opening 49, the endoscope covering 3 after use is put in into the covering abandonment bag 48, and is canceled. Since the diameter D of opening of opening 49 and the overall diameter d of the endoscope covering 3 are abbreviation same sizes and opening 49 is elastic at this time, the work which throws away the endoscope covering 3 into the covering abandonment bag 48 can be done easily.

[0059] When opening discards endoscope covering after using it in a covering abandonment bag with the covering abandonment bag of the structure opened widely, some endoscope coverings jump out or there are troubles -- it is easy to come out of an abandonment bag out of the filth attached to covering. Moreover, after abandonment, its opening opened widely must be drawn in and the trouble which is not not much good also has workability.

[0060] Since the diameter D of opening of opening 49 is not what was extended more greatly than required with the covering abandonment bag 48 of this example, there is no possibility that the unclean endoscope covering 3 and unclean filth may jump out of opening 49 again. Furthermore, since the diameter D of opening of opening 49 is not larger than required, immediately after putting the endoscope covering 3 into the covering abandonment bag 48, the work which closes opening 49 can also be done easily.

[0061] Moreover, the endoscope covering 3 once put in when the lower part was large from opening 49 can make the covering abandonment bag 48 hard to come out of from opening 49 again. Moreover, with this structure, since two or more coverings can be put into one abandonment bag and can be thrown away, while not preparing many covering abandonment bags 48 and being able to reduce cost, handling can also be made easy.

[0062] Thus, according to the composition of the 5th example, after being able to prevent that the part and filth of destroyed covering come out from opening again and putting in covering, it is effective in the ability to offer the covering abandonment bag which is easy to plug up opening.

[0063] According to the embodiment of this invention, the following composition can be obtained as explained in full detail more than the [additional remark]. Namely, (1) In the endoscope for covering, and the covering formula endoscope which has wrap endoscope covering for the insertion section of the aforementioned endoscope for covering at least, and equips with and uses the aforementioned endoscope covering for the aforementioned endoscope for covering The aforementioned endoscope covering can be joined, two or more members can be constituted, and the junction state of the joint of two or more aforementioned members can be held at the time of use of this endoscope covering. And the covering formula endoscope characterized by setting up the bonding strength of the aforementioned joint so that division of the aforementioned joint may be attained, when \*\*\*\*(ing) the aforementioned endoscope covering from the aforementioned endoscope for covering.

[0064] (2) The bonding strength of the aforementioned joint is a covering formula endoscope given in the additional remark 1 characterized by being larger than 2kg.

[0065] (3) The bonding strength of the aforementioned joint is a covering formula endoscope given in the additional remark 2 characterized by being 6kg or less.

[0066] (4) The aforementioned endoscope covering is a covering formula endoscope given in the additional remark 1 characterized by the bonding strength of the joint of this control unit covering and insertion section covering being [ section / insertion / of the aforementioned endoscope for covering ] larger than 1.5kg including wrap control unit covering in wrap insertion section covering and the control unit of the aforementioned endoscope for covering.

[0067] (5) The bonding strength of the aforementioned joint is a covering formula endoscope given in the additional remark 4 characterized by being 6kg or less.

[0068] Two or more members in which the aforementioned endoscope covering contains the nose-of-cam hard section, an elasticity sheath, an elasticity sheath inner-tube way, and a hand mouth soma are joined, and it is constituted. (6) The aforementioned joint the aforementioned nose-of-cam hard section, an elasticity sheath and the aforementioned nose-of-cam hard section, an elasticity sheath inner-tube way and the aforementioned elasticity sheath, a hand mouth soma and the aforementioned elasticity sheath inner-tube way, and hand mouth soma \*\* -- at least -- one of members -- a covering formula endoscope given in the additional remark 1 prepared in between

[0069] (7) It is the covering formula endoscope of the publication by the additional remark 1 constituted so that the aforementioned control unit covering is divided from the aforementioned

insertion section covering when the aforementioned endoscope covering \*\*\*\* [ section / insertion / of the aforementioned endoscope for covering ] the aforementioned endoscope covering from the aforementioned endoscope for covering including wrap control unit covering in wrap insertion section covering and the control unit of the aforementioned endoscope for covering, and it is / covering / insertion section ] possible in \*\*\*\* to the universal-cord side of the aforementioned endoscope for covering.

[0070] With additional remark 1 or the composition of 7, if a junction state is maintained in the bonding strength of each component of endoscope covering at the time of covering wearing and inspection and a user applies the force at the time of \*\*\*\*, it will become possible by setting up so that junction may separate to divide and \*\*\*\* endoscope covering easily. Moreover, since endoscope covering will be divided at the time of \*\*\*\*, the reuse of used endoscope covering becomes impossible.

[0071] (8) The covering formula endoscope carry out having arranged this endoscope covering so that it has the covering container which carries out the packing receipt of the aforementioned endoscope covering in the covering formula endoscope which has wrap endoscope covering for the endoscope for covering, a direction directions means of top and bottom direct the direction of antigravity to this covering container prepares and it is [ point / of the aforementioned endoscope covering ] suitable in the direction of antigravity in the aforementioned covering container corresponding to the directions direction of the aforementioned direction directions means of top and bottom as the feature.

[0072] (9) A covering formula endoscope given in the additional remark 8 characterized by arranging a handle in the upper surface of the aforementioned covering container as the aforementioned direction directions means of top and bottom.

[0073] (10) The aforementioned handle is a covering formula endoscope given in the additional remark 9 which is fabricated by the aforementioned covering container in one and is prepared in it.

[0074] (11) A covering formula endoscope given in the additional remark 8 which prepared the cap who becomes the point of the aforementioned endoscope covering from the flexible quality of the material.

[0075] (12) The aforementioned cap is a covering formula endoscope given in the additional remark 11 which serves as a wrap disposal implement plug the disposal implement insertion mouth prepared in the hand mouth soma of the aforementioned endoscope covering.

[0076] (13) The aforementioned direction directions means of top and bottom is a covering formula endoscope given in the additional remark 8 constituted by the display prepared in the front face of the aforementioned covering container.

[0077] (14) A covering formula endoscope given in the additional remark 13 which prepared the aforementioned display in two or more fields of the aforementioned covering container.

[0078] (15) In the covering formula endoscope with which the endoscope for covering is equipped and which has wrap endoscope covering for this endoscope for covering While the aforementioned endoscope covering has two ducts for disposal implement insertion, governs the nose of cam of the two aforementioned ducts and joins them in the nose-of-cam hard section of this endoscope covering The covering formula endoscope characterized by preparing the two aforementioned ducts and one opening open for free passage for a disposal implement protrusion in the apical surface of the aforementioned nose-of-cam hard section.

[0079] (16) A covering formula endoscope given in the additional remark 15 characterized by having arranged two nozzles for supplied-air water supply on both sides of the aforementioned opening in the apical surface of the aforementioned nose-of-cam hard section.

[0080] (17) The aforementioned opening is a covering formula endoscope given in the additional remark 15 which has the opening width of face which can insert in at least two disposal implements.

[0081] (18) the hand mouth soma of the aforementioned endoscope covering -- setting -- two insertion -- a covering formula endoscope given in the additional remark 15 which formed one disposal implement plug which has a hole

[0082] (19) the covering abandonment bag which contains endoscope covering after the use for discarding the aforementioned endoscope covering in the covering formula endoscope which has wrap endoscope covering for the endoscope for covering -- having -- the path of opening of this

abandonment bag -- the overall diameter of the hard section of the aforementioned endoscope covering, or the half-hard section, and abbreviation -- the covering formula endoscope characterized by to have presupposed that it is the same and to constitute the aforementioned opening elastically [0083] (20) The aforementioned covering abandonment bag is a covering formula endoscope given in the additional remark 19 from which a downward portion consists of aforementioned openings with the bag of a large path from this diameter of opening.

[0084] (21) The aforementioned covering abandonment bag is a covering formula endoscope given in the additional remark 19 with the capacity which can contain two or more endoscope coverings.

[0085]

[Effect of the Invention] As explained above, according to this invention, it is effective in the ability to offer the covering formula endoscope which can do easily the work at the time of removing covering from the main part of an endoscope.

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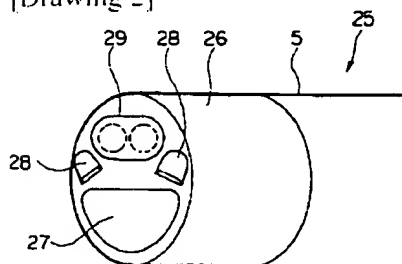
[Translation done.]

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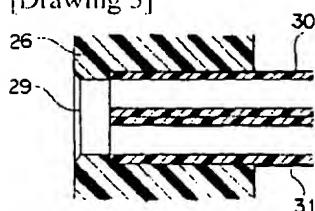
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## DRAWINGS

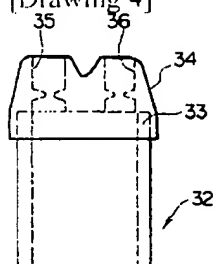
[Drawing 2]



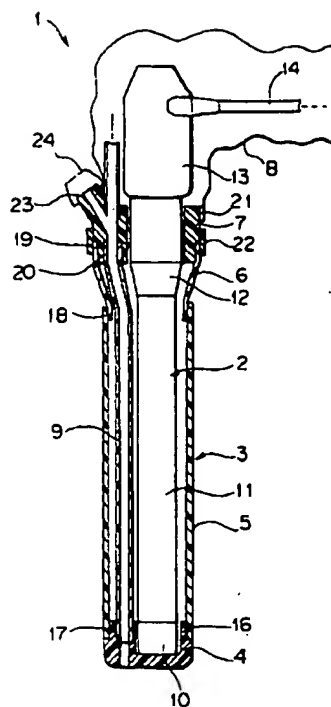
[Drawing 3]



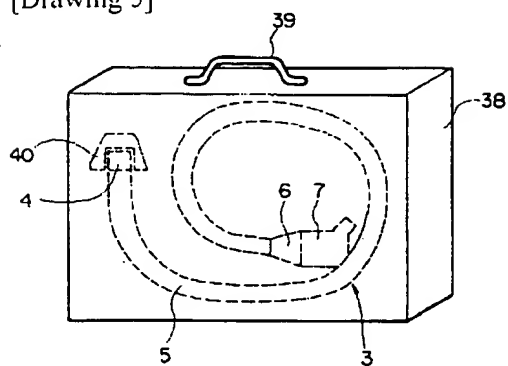
[Drawing 4]



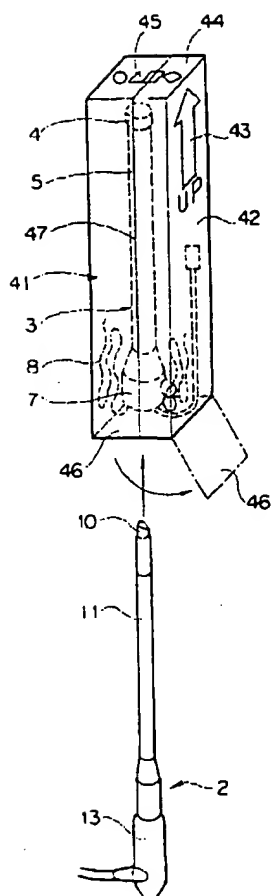
[Drawing 1]



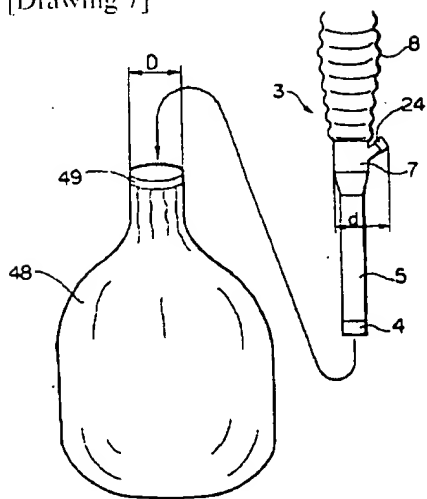
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]